THE GENUS LACHESILLA (CORRODENTIA, CAECILIIDAE) NORTH OF MEXICO

BY

KATHRYN MARTHA SOMMERMAN

B. S., University of Connecticut, 1937

M. S., University of Illinois, 1941

AN ABSTRACT OF A THESIS

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY IN ENTOMOLOGY IN THE GRADUATE SCHOOL OF THE UNIVERSITY OF ILLINOIS, 1945

URBANA, ILLINOIS

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ACKNOWLEDGMENTS

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Although many institutions throughout the country sent their Corrodentia collections for study, only those from the following institutions contained material in the genus *Lachesilla*: Illinois Natural History Survey, United States National Museum, Pennsylvania State College, North Carolina State College, Massachusetts State College, Ohio State University, University of Kentucky, Cornell University, Chicago Natural History Museum, Michigan State College, University of Minnesota, Dominion Entomological Laboratory at Saskatoon, University of Kansas, Kansas State College, South Dakota State College, North Dakota State College, State College of Washington, University of British Columbia and University of California at Berkeley. I wish to thank

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the Curators, or those in charge of the collections, at these institutions for the use of their material, for without it this study could not have been made.

The genus *Lachesilla* Westwood is one of ten Nearctic genera in the family Caeciliidae and contains ten previously described species from the Nearctic region. This study treats twenty-one species, nine of which are new to science, one of which is here transferred to this genus, one of which was previously considered a variety and is here elevated to species rank and ten species previously placed in *Lachesilla*.

In general the species in this genus are found out-of-doors breeding in dried leaves hanging in bunches on trees, dried grass in the fields, dried cornstalks, on branches and twigs of conifers and in ground cover. A few species breed indoors, under favorable conditions, in mouldy organic materials. Not much is known concerning the bionomics of the species but the following information is known for some of the Illinois species. The eggs are deposited singly without a sheet of silk to cover them. They are oblong-oval, with a spoon-shaped groove on top. The egg stage lasts about one week; the six nymphal stadia cover a period of two to three weeks and the adults live about two weeks. Winter is passed in the egg stage. In this region both the nymphs and adults are most abundant in late spring and in the fall.

The following equipment is necessary for collecting these psocids: sweeping net, aspirator, knife, pipette, forceps, sifter and white cloth, vials and 70-80% Ethyl alcohol. The individuals can be most easily picked up, when collecting, by using the vial-type aspirator. They are sluggish so can be readily picked up from the net after sweeping, from the cloth after sifting ground cover, or directly from the dried leaves if they are carefully unfurled by hand. They can be killed after shaking them to the bottom of the aspirator by quickly pouring in 2 or 3 cc. of alcohol.

Lachesillas and Corrodentia in general are best preserved in 80% Ethyl alcohol. Homeopathic rubber-stoppered vials are most satisfactory for storage. The specimens should be put in small shell vials 25-35 mm. long, plugged with cotton, which are inverted in the Homeopathic vials. This prevents the specimens from becoming battered and chopped up by the movement of the labels in the alcohol. Pinned or "pointed" material and slide mounts *in toto* are very unsatisfactory methods of preservation, and are definitely not recom-

mended for this group of insects.

In preparing the specimens for study the abdomen is removed, placed in cold KOH (2-5%) for 8-12 hours, then rinsed in distilled water, stained in Mercurochrome and studied in alcohol or glycerin. If studied in alcohol the specimen can be held in place by putting it on a little Petroleum jelly in the bottom of a Syracuse dish; if in glycerin bent "Minutens" inserted in the abdomen serve the purpose. Excess grease on the specimens can be cleaned off by rinsing in Carbon Tetrachloride before returning the specimen to alcohol for permanent storage.

In this genus excellent morpholigical characters have been found in the terminalia. Two keys to species have been prepared, one for each sex, based almost entirely upon characters of the terminalia. All structural characters used in the keys, excepting those for one species, specimens of which were not avaiable for study, are illustrated in the three plates included in the thesis. The plates contain thirty-seven figures of the terminalia, postero-ventral view. Following the keys are the detailed descriptions of both sexes of each species and a summary of their occurrence, i.e. geographical range by states and seasonal range by months. All this information is based entirely upon specimens examined during this study.

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VITA

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Kathryn M. Sommerman was born January 11, 1915 at New Haven, Connecticut. She attended the Mt. Carmel Grammar School from 1920 to 1928, New Haven High School from 1928 to 1932 and then took a Post Graduate Course for one year. In September, 1933 she entered Connecticut State College (now University of Connecticut) and received her Bachlor of Science Degree with High Distinction in Entomology in June, 1937. She enrolled in the Graduate School at the University of Illinois in the fall of 1937 and received her Master of Science Degree in Entomology in June, 1941.

She worked at the Connecticut Agricultural Experiment Station in the Department of Entomology, as Laboratory Assistant, during the summers of 1936, 1937 and 1938. She was employed by the Illinois State Natural History Survey, as Artist and Entomological Assistant, in the Section of Insect Survey in June, 1939 and continued in that capacity until July, 1945.

She is an associate member of Sigma Xi, and a member of Phi Sigma Society and Sigma Delta Epsilon.

She has published the following papers:

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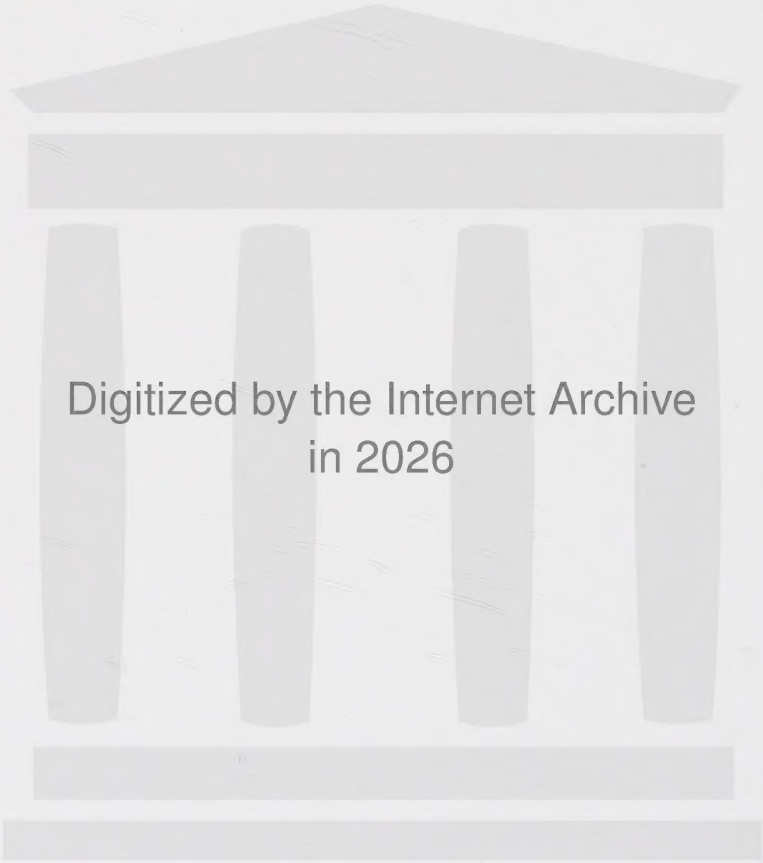
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